

# Abstract

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Preparation of Platelets from Apheresis

Diploma thesis

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**Background:** Aim of the thesis was to evaluate and compare preparation of platelets from apheresis at two departments of the University Hospital Hradec Králové – Transfusion Department (TD) and Department of Clinical Hematology (DCH), using two different types of cell separators – TRIMA Accel version 5.1 and Haemonetics MCS+.

**Methods:** Parameters recorded during platelet collection in the period from August 2010 to January 2011 were used to evaluate characteristics of products and collection procedure properties: collection efficiency, relation between pre donation platelet count and platelet yield, post donation reduction in platelet count, difference between required and acquired platelet yield and leukodepletion. The incidence of adverse reactions of platelet apheresis donors were also recorded.

**Results:** DCH produces more voluminous concentrates with higher platelet yield. The collection efficiency 60 % was determined as satisfactory in both separators. Correlation between pre donation platelet count and platelet yield was positive. Average post donation reduction in platelet count was 27,8 %. There was significant difference between required and acquired platelet yield while worse result was achieved by DCH separator. Leukodepletion efficiency of both separators meet the required criteria. There was very high incidence of adverse reaction 9,43 % in DCH.

**Conclusions:** The recorded differences suggest that TD with more experience in this field than DCH perform superior and safer platelet apheresis collection.